

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (original): A data acquisition apparatus for scanning a surface to record digital images thereof and to record data for determining three-dimensional coordinates thereof, said apparatus comprising:

at least one camera for recording said digital images of said surface, said camera having an optical axis;

at least two lasers for marking points in said digital images for determining said three dimensional coordinates of said surface, said lasers having optical axes, said optical axes of said camera and said lasers being essentially parallel;

an essentially horizontal rail for mounting said camera and said lasers, said camera being mounted between said lasers, and said rail having means for horizontally shifting said camera and said lasers along said rail;

at least one essentially vertical post attached to said rail by means for rotating and horizontally shifting said rail, said post having means for vertically shifting said rail;

at least one movable platform for mounting said posts and for positioning said camera and said lasers proximate to said surface; and,

data acquisition equipment for adjusting said platforms, said posts, said rail, said camera, and said lasers; for recording position data for said platforms, said posts, said rail, said camera, and said lasers; and, for recording said digital images.

Claim 2 (original): The apparatus of claim 1 wherein said surface is selected from the group comprising an object, an area, a room, a building, an indoor area, and an outdoor area.

Claim 3 (original): The apparatus of claim 1 wherein said surface is variable in size.

Claim 4 (new): The apparatus of claim 1 wherein said data acquisition equipment includes a data acquisition computer system in communication with said data acquisition apparatus, said data acquisition computer system comprising:

means for adjusting said data acquisition apparatus in accordance with user instructions;

means for receiving said position data and said digital images from said data acquisition apparatus;

means for determining three-dimensional coordinates of said surface from said position data and said digital images;

means for associating said digital images with said three-dimensional coordinates to produce said three-dimensional data model;

memory for storing said position data, said digital images, said three-dimensional coordinates, and said three-dimensional data model;
a display for presenting said three-dimensional data model to said user; and,
an input device for accepting user instructions from said user for adjusting said data acquisition apparatus.

Claim 5 (new): The apparatus of claim 4 further comprising a post-processing computer system for formatting said three-dimensional data model for export to an external application.

Claim 6 (new): The apparatus of claim 4 wherein said data acquisition computer system includes a master node controlling a network of parallel computer slave nodes.

Claim 7 (new): The apparatus of claim 6, wherein said network of parallel computer slave nodes has a configuration selected from the group comprising a cube, a hyper-cube, a mesh, and a layered web.

Claim 8 (new): The apparatus of claim 4 wherein said user instructions include predetermined data parameters for said three-dimensional data model.

Claim 9 (new): The apparatus of claim 8 wherein said predetermined data parameters are selected from the group comprising area mode, object mode, size of area, size of object, resolution, accuracy, and detail.